

REMARKS

Responsive to the outstanding Office Action, applicant has carefully studied the Examiner's rejections. Claims 13, 17-18 and 20-23 have been amended herein. Claims 25 and 26 are new. It is respectfully submitted that no new matter has been presented in these amendments. Favorable reconsideration of the application in light of the following detailed arguments is respectfully requested.

INDICATION OF ALLOWABLE SUBJECT MATTER

The Examiner indicated that claims 17 and 23 would be allowable if rewritten in independent form, including the limitations of those claims and their respective base claims and any intervening claims, and also if amended to overcome the rejections under 35 USC 112.

Claims 25 and 26 are newly presented herein. Claim 25 contains the subject matter of claims 13 and 17, and claim 26 contains the subject matter of claims 13, 20 and 23. It is believed that these claims comply with the requirements of 35 USC 112. It is therefore believed that these claims are allowable as indicated by the Examiner. However, applicants believe that broader claim coverage is available, so claim 13 and the claims dependent therefrom will be argued hereinbelow.

REJECTION OF CLAIMS UNDER 35 USC §112

Claims 13, 17, 20, 21, 22 and 23 were rejected under 35 USC 112 for indefiniteness. The term "absorbate" referenced by the Examiner has been deleted from the claims and replaced with the term "sour-gas rich absorbent" as suggested by the Examiner.

The phrase "any other components" has been deleted from the claims.

The phrase "sour-gas poor absorbent" has been provided in a manner believed to provide proper antecedent basis.

The phrase "the resultant mixture" has been removed or amended to provide proper antecedent basis for the terms used.

Claims 22 and 23 have been amended to depend from claim 20, as suggested by the Examiner.

It is therefore believed that the claims fully comply with the requirements of 35 USC §112, second paragraph, and it is respectfully requested that this rejection be reconsidered and withdrawn.

ABSTRACT

The Examiner objected to the abstract as being of undue length. In response thereto, the abstract has been deleted and a new abstract presented which contains fewer than 150 words. It is therefore requested that this new abstract be entered and the objection be withdrawn.

REJECTION OF CLAIMS UNDER 35 USC §102

In the outstanding Office Action, the Examiner rejected claims 13 and 20 under 35 USC §102 as being anticipated by Gross '987.

The Gross reference discloses a process for the removal of CO₂ and sulfur compounds from natural gas and raw synthesis gas wherein N-formylmorpholine and N-acetylmorpholine mixtures are used as the desorbent at temperatures between -20°C and +40°C at pressures of 10 to 150 bar in a scrubbing operation. The acid gases are removed from the absorbent by flashing and the regenerated absorbent is recycled to the absorbent.

In the Gross reference, it is important to note that the liquid carrying the absorbed sour gas is going into a conventional absorption-desorption process using a special solvent combination which can include a plurality of flash chambers and which require defined fixed reaction conditions. This differs from the present invention which utilizes a "high-pressure flash" stage which is operated in such a manner that the variable pressure allows the desorbed gas to be condensed by cooling water or cooling air. The Gross reference is designed around the use of the solvent combination therein, as opposed to the use of the high pressure flash column in the present invention. This modified process in the present invention allows for an improved sour gas separation.

It is respectfully submitted that this feature of the present invention is not disclosed in the prior art reference. Therefore, it is submitted that Claim 13, and the claims dependent therefrom, is allowable over the applied art of record.

REJECTION OF CLAIMS UNDER 35 USC §103

Claims 14-16, 19 and 24 were rejected under 35 USC 103 as being unpatentable over Gross in view of Carnell.

Claims 18, 21 and 22 were rejected under 35 USC 103 as being unpatentable over Gross in view of Carnell and further in view of EP 0968748.

All of these claims depend from claim 13, which is believed to be allowable as discussed above. However, with regard to claims 14-16, 19 and 24, it is noted that claim 13 indicates that the pressure and temperature must be set such that the sour gas can be condensed through the use of cooling air or cooling water and the additional use of stripping gas in a stripping unit. Neither of the references applied against these claims teach or suggest this feature. The fact that the laden stripping gas is cooled its further use and the use of purifies stripping gas are only shown in the present invention. The prior art documents relied on would not teach or suggest this feature of the invention.

Furthermore, the EP 0968748 reference also does not lead one skilled in the art to a pressure and temperature value suitable for use with the flash unit of the present invention. The present invention utilizes depressurizing conditions such that the laden absorbent is heated and depressurized in the flash unit so that the desoured gas can be condensed by means of cooling water or cooling air. The remaining independent claims provide additional preferred features of the present invention.

Thus the present invention, as claimed, utilizes conditions for a high-pressure flash column which allows sour gas at an elevated pressure suitable for reinjection into gas fields. The depressurizing conditions which are suitable for a condensation by cooling water or cooling air with the use of the stripping unit cannot be shown through any reasonable combination of the cited references.

As claims 14-24 depend, directly or indirectly, from an allowable claim 13, it is submitted that those claims are allowable based, at least, upon their dependence from an allowable base claim.

SUMMARY

It is believe that the above amendments place the application in condition for allowance. Should the Examiner wish to modify the application in any way, applicant's attorney suggests a telephone interview in order to expedite the prosecution of the application.

Respectfully submitted,

/Mark A Hixon/

Mark A. Hixon

Registration No. 44,766

ATTORNEYS

Marshall & Melhorn, LLC
Four SeaGate - 8th Floor
Toledo, Ohio 43604
(419) 249-7114
(419) 249-5171 Facsimile